

**REMARKS**

Claim 1 has been amended to specify that the method comprises the step of “preparing a graft composition comprising basement membrane of a warm-blooded vertebrate by removing endogenous cells, DNA, and endotoxins from the graft composition.” Support for this claim amendment may be found at least at, for example, page 4, lines 18-26 and page 5, line 5-6, of the specification as originally filed. A minor amendment has been made to claim 5. New claims 10-16 have been added. Support for claim 10 may be found on page 12, lines 2-3; support for claim 11 may be found on page 11, lines 13-16; support for claims 12 and 13 may be found on page 9, lines 3-18; support for claim 14 may be found on page 13, lines 30-34; support for claim 15 may be found on page 14, lines 1-13; and support for claim 16 may be found on page 10, lines 6-9 and on page 13, lines 15-17, of the specification as originally filed.

**Rejection of Claims 1-9 Under 35 U.S.C. § 103(a)-**

The Examiner has maintained the rejection of claims 1-9 under 35 U.S.C. § 103(a) as being obvious over WO 98/25637 in view of U.S. Patent No. 5,955,110 (hereinafter the ‘110 patent). The Examiner contends that WO 98/25637 teaches the use of a tissue graft composition comprising liver basement membrane of a warm-blooded vertebrate for repair of damaged or diseased tissues. The Examiner further contends that one skilled in the art would have been motivated to use the invention of WO 98/25637 for the repair of the abdominal wall because the ‘110 patent teaches the use of a multilayered, homolaminate submucosal graft for abdominal wall repair. Applicant respectfully traverses the Examiner’s rejection. Applicant’s amended claims 1-9 are not obvious over WO 98/25637 in view of the ‘110 patent.

Applicant has amended claims 1-9 to specify that the method comprises the step of “preparing a graft composition comprising basement membrane of a warm-blooded vertebrate by removing endogenous cells, DNA, and endotoxins from the graft composition.” The asserted

combination of WO 98/25637 and the '110 patent must teach or suggest *each and every claim feature*. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (emphasis added) (to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art). Neither WO 98/25637 nor the '110 patent suggests the claimed step of "preparing a graft composition comprising basement membrane of a warm-blooded vertebrate by removing endogenous cells, DNA, and endotoxins from the graft composition." In particular, neither WO 98/25637 nor the '110 patent even mentions endotoxins. Therefore, WO 98/25637 and the '110 patent, either alone or in combination, are incapable of defeating the patentability of Applicant's amended claims 1-9 under 35 U.S.C. § 103(a).

Additionally, it is true that obviousness may be supported if "a person of ordinary skill in the art would have been motivated to combine the prior art to achieve the claimed invention and that there would have been a reasonable expectation of success," *DyStar Textilfarben GmbH & Co. Deutschland KG v. C.H. Patrick Co.*, 464 F.3d 1356, 1360, 80 USPQ2d 1641, 1645 (Fed. Cir. 2006). However, if any of these findings cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art. See MPEP § 2143.

A skilled artisan would not have been motivated to combine the teaching of WO 98/25637 and the '110 patent with a reasonable expectation of success. Applicant's claims 1-9 specify the repair of body wall tissue that comprises a multilaminated, stratified structure comprising a combination of differentiated tissue types, including connective tissue, skeletal muscle, adipose tissue, epidermal tissue, and the serous lining of the body wall cavity. Consequently, because of the complexity of body wall tissue, a skilled artisan would not have had a reasonable expectation of success to substitute liver basement membrane for the intestinal tissue-derived graft compositions described in the '110 patent to repair body wall tissue.

The '110 patent describes graft compositions comprising intestinal submucosa tissue, and discloses the use of those graft compositions for the repair of hernias and gastroschisis. WO 98/25637 describes graft compositions comprising liver basement membrane. The graft compositions described in WO 98/25637 are not compositionally and structurally identical to those described in the '110 patent. Accordingly, it is not obvious that the liver-derived graft compositions described in WO 98/25637 could be substituted for the compositions described in the '110 patent. Nor would a skilled artisan, at the time the present application was filed, have had a reasonable expectation of success in substituting the graft compositions of WO 98/25637 comprising liver basement membrane for the compositions described in the '110 patent to effectively repair *in vivo* a complex structure such as a multilaminate, stratified structure comprising differentiated tissue types including connective tissue, skeletal muscle, adipose tissue, epidermal tissue, and the serous lining of the body wall cavity.

Furthermore, Applicant's statements, cited by the Examiner, that liver basement membrane tissue "can be substituted for intestinal submucosa tissue in most, if not all, of the applications previously reported for intestinal submucosa, including enhancing wound healing, promoting endogenous tissue growth, stimulating cell proliferation and inducing cell differentiation" refer generally to effects of liver basement membrane graft compositions, not to the specific effect of repair of body wall. Contrary to the Examiner's contention, these statements do not render Applicant's claims 1-9 obvious. Again, as noted in our last response, these statements do not indicate that liver basement membrane would be effective in repairing *in vivo* a complex, multilaminate, stratified structure comprising multiple differentiated tissue types including connective tissue, skeletal muscle, adipose tissue, epidermal tissue, and the serous lining of the body wall cavity. Thus, Applicant's amended claims 1-9 are not obvious over WO 98/25637 in view of the '110 patent. Withdrawal of the rejection of claims 1-9 under 35 U.S.C. § 103(a) as being obvious over WO 98/25637 in view of the '110 patent is respectfully requested.

**Rejection of Claims 1-9 For Obviousness-Type Double Patenting-**

The Examiner has rejected claims 1-9 as being unpatentable for obviousness-type double patenting over claims 1-3 and 9 of U.S. Patent No. 6,793,939 (hereinafter the '939 patent) in view of the '110 patent and WO 98/25637. The '939 patent is a continuation application of the U.S. national application that was based on the PCT application that published as WO 98/25637. Applicant respectfully traverses the Examiner's rejection. As amended, claims 1-9 are not obvious over claims 1-3 and 9 of the '939 patent in view of the '110 patent and WO 98/25637.

Applicant's amended claims 1-9 specify that the method comprises the step of "preparing a graft composition comprising basement membrane of a warm-blooded vertebrate by removing endogenous cells, DNA, and endotoxins from the graft composition." Claims 1-3 and 9 of the '939 patent in view of the '110 patent must teach or suggest *each and every claim feature*. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (emphasis added) (to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art). The '110 patent describes graft compositions comprising intestinal submucosa tissue and their use for the repair of hernias and gastroschisis. Claims 1-3 and 9 of the '939 patent are directed to a method for tissue repair using liver basement membrane compositions, and WO 98/25637 describes those liver basement membrane compositions. None of WO 98/25637, claims 1-3 and 9 of the '939 patent, or the '110 patent, suggests the claimed step of "preparing a graft composition comprising basement membrane of a warm-blooded vertebrate by removing endogenous cells, DNA, and endotoxins from the graft composition." None of the cited references even mentions endotoxins. Accordingly, Applicant's amended claims 1-9 are not obvious over claims 1-3 and 9 of the '939 patent in view of the '110 patent and WO 98/25637.

Moreover, Applicant's claims 1-9 specify the repair of body wall tissue that comprises a "multilaminate, stratified structure comprising a combination of differentiated tissue types including connective tissue, skeletal muscle, adipose tissue, epidermal tissue, and the serous lining of the body wall cavity." The graft compositions claimed in claims 1-3 and 9 of the '939 patent and described in WO 98/25637 are not compositionally and structurally identical to those described in the '110 patent. Accordingly, as discussed above, it is not obvious that the liver-derived graft compositions claimed in claims 1-3 and 9 of the '939 patent and described in WO 98/25637 could be substituted for those described in the '110 patent. Nor would a skilled artisan, at the time the present application was filed, have had a reasonable expectation of success in substituting the graft compositions claimed in claims 1-3 and 9 of the '939 patent and described in WO 98/25637 for the compositions described in the '110 patent to effectively repair *in vivo* a complex structure such as a multilaminate, stratified structure comprising multiple differentiated tissue types including connective tissue, skeletal muscle, adipose tissue, epidermal tissue, and the serous lining of the body wall cavity. Accordingly, Applicant's amended claims 1-9 are not obvious over claims 1-3 and 9 of the '939 patent in view of the '110 patent and WO 98/25637. Withdrawal of the rejection of claims 1-9 for obviousness-type double patenting is respectfully requested.

**Provisional Rejection of Claims 1-9 For Obviousness-Type Double Patenting-**

The Examiner has provisionally rejected claims 1-9 as being unpatentable for obviousness-type double patenting over claims 24 and 25 of co-pending application number 10/775,386 in view of the '110 patent and WO 98/25637. Application number 10/775,386 (hereinafter the '386 application) is a continuation application of the U.S. national application that was based on the PCT application that published as WO 98/25637. Applicant respectfully

traverses the Examiner's rejection. As amended, claims 1-9 are not obvious over claims 24 and 25 of the '386 application in view of the '110 patent and WO 98/25637.

Applicant's amended claims 1-9 specify that the method comprises the step of "preparing a graft composition comprising basement membrane of a warm-blooded vertebrate by removing endogenous cells, DNA, and endotoxins from the graft composition." Claims 24 and 25 of the '386 application in view of the '110 patent must teach or suggest *each and every claim feature*. See *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974) (emphasis added) (to establish *prima facie* obviousness of a claimed invention, all the claim features must be taught or suggested by the prior art). The '110 patent describes graft compositions comprising intestinal submucosa tissue and their use for the repair of hernias and gastroschisis. Claims 24 and 25 of the '386 application are directed to a method for tissue repair using gelled liver basement membrane compositions, and WO 98/25637 describes graft compositions comprising liver basement membrane. None of WO 98/25637, claims 24 and 25 of the '386 application, or the '110 patent, suggests the claimed step of "preparing a graft composition comprising basement membrane of a warm-blooded vertebrate by removing endogenous cells, DNA, and endotoxins from the graft composition." None of the cited references even mentions endotoxins. Accordingly, Applicant's amended claims 1-9 are not obvious over claims 24 and 25 of the '386 application in view of the '110 patent and WO 98/25637

Moreover, Applicant's claims 1-9 specify the repair of body wall tissue that comprises a "multilaminate, stratified structure comprising a combination of differentiated tissue types including connective tissue, skeletal muscle, adipose tissue, epidermal tissue, and the serous lining of the body wall cavity." The graft compositions claimed in claims 24 and 25 of the '386 application and described in WO 98/25637 are not compositionally and structurally identical to those described in the '110 patent. Accordingly, as discussed above, it is not obvious that the liver-derived graft compositions claimed in claims 24 and 25 of the '386 application and

described in WO 98/25637 could be substituted for those described in the '110 patent. Nor would a skilled artisan, at the time the present application was filed, have had a reasonable expectation of success in substituting the graft compositions claimed in claims 24 and 25 of the '386 application and described in WO 98/25637 for the compositions described in the '110 patent to effectively repair *in vivo* a complex structure such as a multilaminar, stratified structure comprising multiple differentiated tissue types including connective tissue, skeletal muscle, adipose tissue, epidermal tissue, and the serous lining of the body wall cavity. Accordingly, Applicant's amended claims 1-9 are not obvious over claims 24 and 25 of the '386 application in view of the '110 patent and WO 98/25637. Withdrawal of the rejection of claims 1-9 for obviousness-type double patenting is respectfully requested.

CONCLUSION

The foregoing amendments and remarks are believed to fully respond to the Examiner's rejections. The claims are in condition for allowance. Applicant respectfully requests allowance of the claims, and passage of the application to issuance.

Respectfully submitted,



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